



US008517471B2

(12) **United States Patent**
Maddelein et al.

(10) **Patent No.:** **US 8,517,471 B2**
(45) **Date of Patent:** **Aug. 27, 2013**

(54) **SEAT ASSEMBLY HAVING A MOVEABLE HEAD RESTRAINT**

(75) Inventors: **Michael Maddelein**, Northville, MI (US); **Karsten Mueller**, Ingolstadt (DE); **Bernd Rolf Schwerma**, Neuberg (DE)

(73) Assignee: **Lear Corporation**, Southfield, MI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 149 days.

(21) Appl. No.: **12/879,256**

(22) Filed: **Sep. 10, 2010**

(65) **Prior Publication Data**

US 2011/0109143 A1 May 12, 2011

(30) **Foreign Application Priority Data**

Nov. 12, 2009 (DE) 10 2009 046 660

(51) **Int. Cl.**
B60N 2/48 (2006.01)

(52) **U.S. Cl.**
USPC **297/410**

(58) **Field of Classification Search**
USPC 297/410
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,265,482 A	5/1981	Nishimura et al.
4,674,797 A	6/1987	Tateyama
6,082,817 A	7/2000	Muller
6,390,558 B2	5/2002	Fischer et al.
6,688,697 B2	2/2004	Baumann et al.

6,715,829 B2	4/2004	Svantesson et al.
6,767,064 B2	7/2004	Veine et al.
6,805,411 B2	10/2004	Gramss et al.
6,899,395 B2	5/2005	Yetukuri et al.
7,048,336 B2	5/2006	Mawbey et al.
7,070,235 B2	7/2006	Schilling et al.
7,073,863 B1	7/2006	Low et al.
7,111,901 B2	9/2006	Schlierf et al.
7,137,668 B2	11/2006	Kreitler
7,195,313 B2	3/2007	Hippel et al.
7,232,187 B1	6/2007	Sundararajan et al.
7,306,287 B2 *	12/2007	Linardi et al. 297/410
7,758,127 B2 *	7/2010	Bokelmann et al. 297/410
7,871,129 B2 *	1/2011	Boes et al. 297/410 X
7,878,597 B2 *	2/2011	Bokelmann et al. 297/410
8,066,331 B2 *	11/2011	Boes 297/410
8,297,705 B2 *	10/2012	Brunner et al. 297/410
8,303,038 B2 *	11/2012	Smith 297/410 X
8,303,039 B2 *	11/2012	Mueller et al. 297/410
8,376,465 B2 *	2/2013	Veine et al. 297/410
8,408,645 B2 *	4/2013	Alexander et al. 297/410 X

(Continued)

FOREIGN PATENT DOCUMENTS

DE	102004005695 A1	8/2004
DE	102006015785 A1	10/2006

(Continued)

OTHER PUBLICATIONS

German Patent and Trademark Office, Office Action for the corresponding German Patent Application No. 10 2009 046 660.6-18 mailed May 6, 2010.

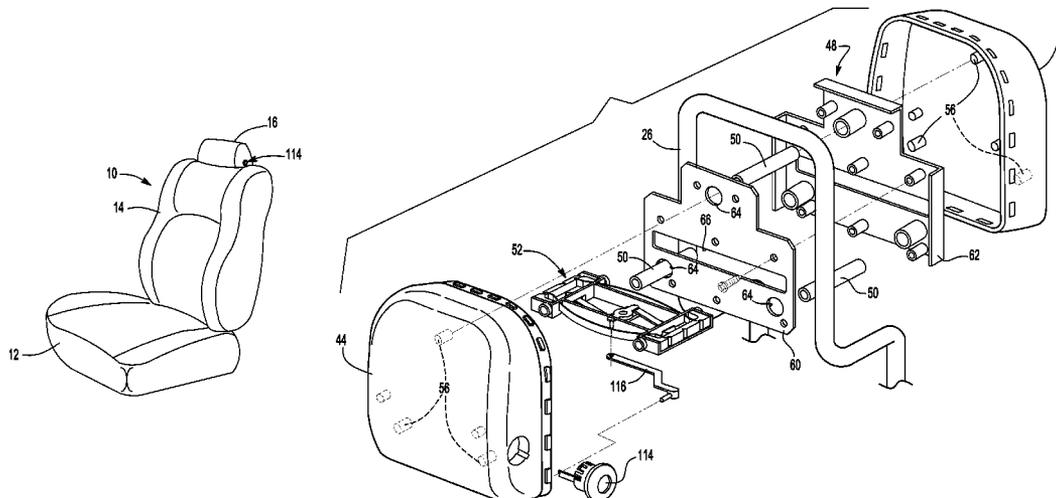
Primary Examiner — Rodney B White

(74) Attorney, Agent, or Firm — Brooks Kushman P.C.

(57) **ABSTRACT**

A seat assembly having a moveable headrest assembly disposed on a support post. The headrest assembly has a latching mechanism configured to engage the support post to inhibit movement of the headrest assembly in a first direction.

20 Claims, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2001/0028191 A1 10/2001 Lance
2001/0040396 A1 11/2001 Kreuels et al.
2004/0195894 A1 10/2004 Pal et al.
2005/0077762 A1 4/2005 Kraemer et al.
2005/0116515 A1 6/2005 Schlierf et al.
2006/0071518 A1 4/2006 Hippel et al.
2006/0226688 A1 10/2006 Terada et al.
2006/0250017 A1* 11/2006 Otto et al. 297/410

2007/0216211 A1 9/2007 Mori
2009/0058162 A1 3/2009 Boes et al.
2009/0146479 A1 6/2009 Boes et al.

FOREIGN PATENT DOCUMENTS

DE 102007034961 A1 4/2008
FR 2852066 A1 9/2004
GB 2340744 A 3/2000
WO 2004089688 A1 10/2004
WO 2007073034 A1 6/2007

* cited by examiner

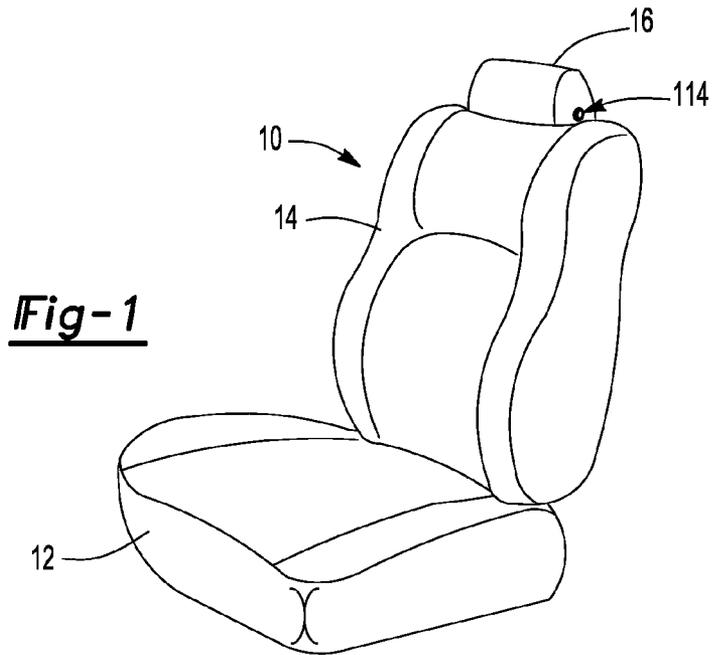


Fig-1

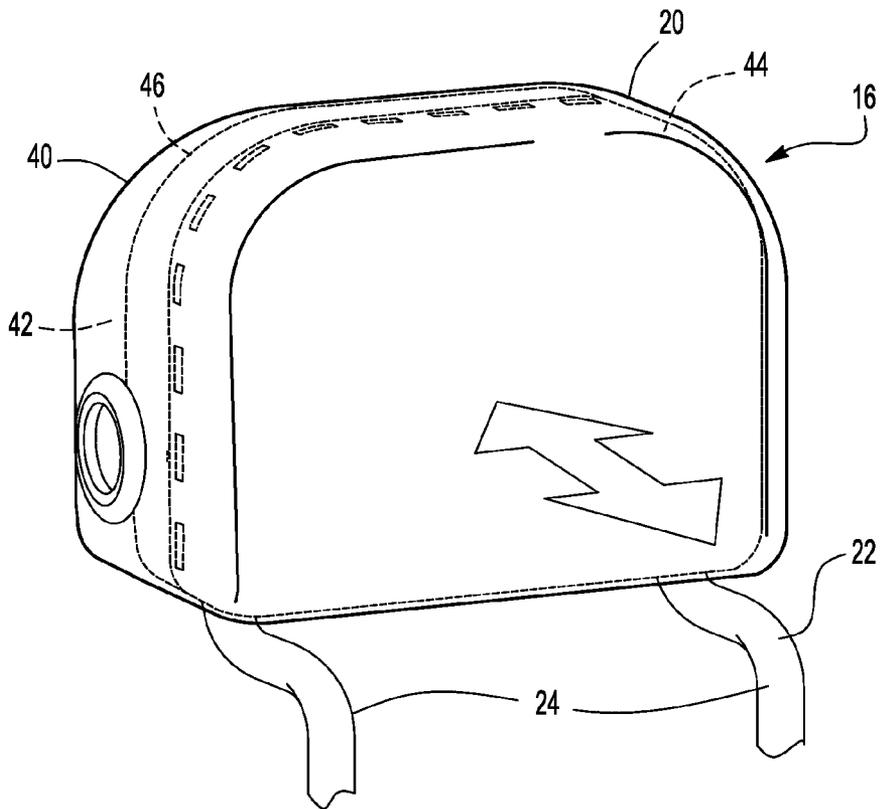


Fig-2

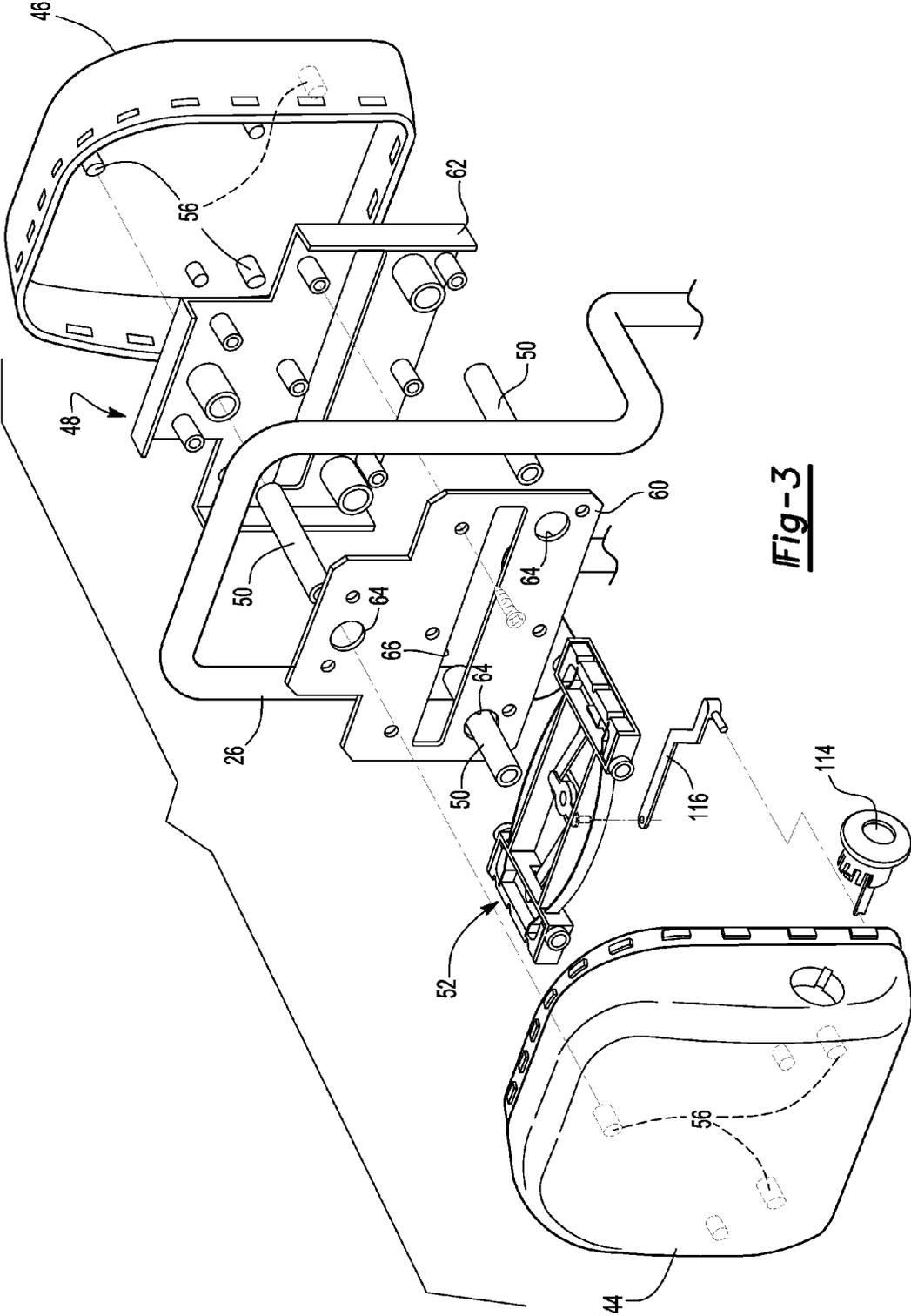


Fig-3

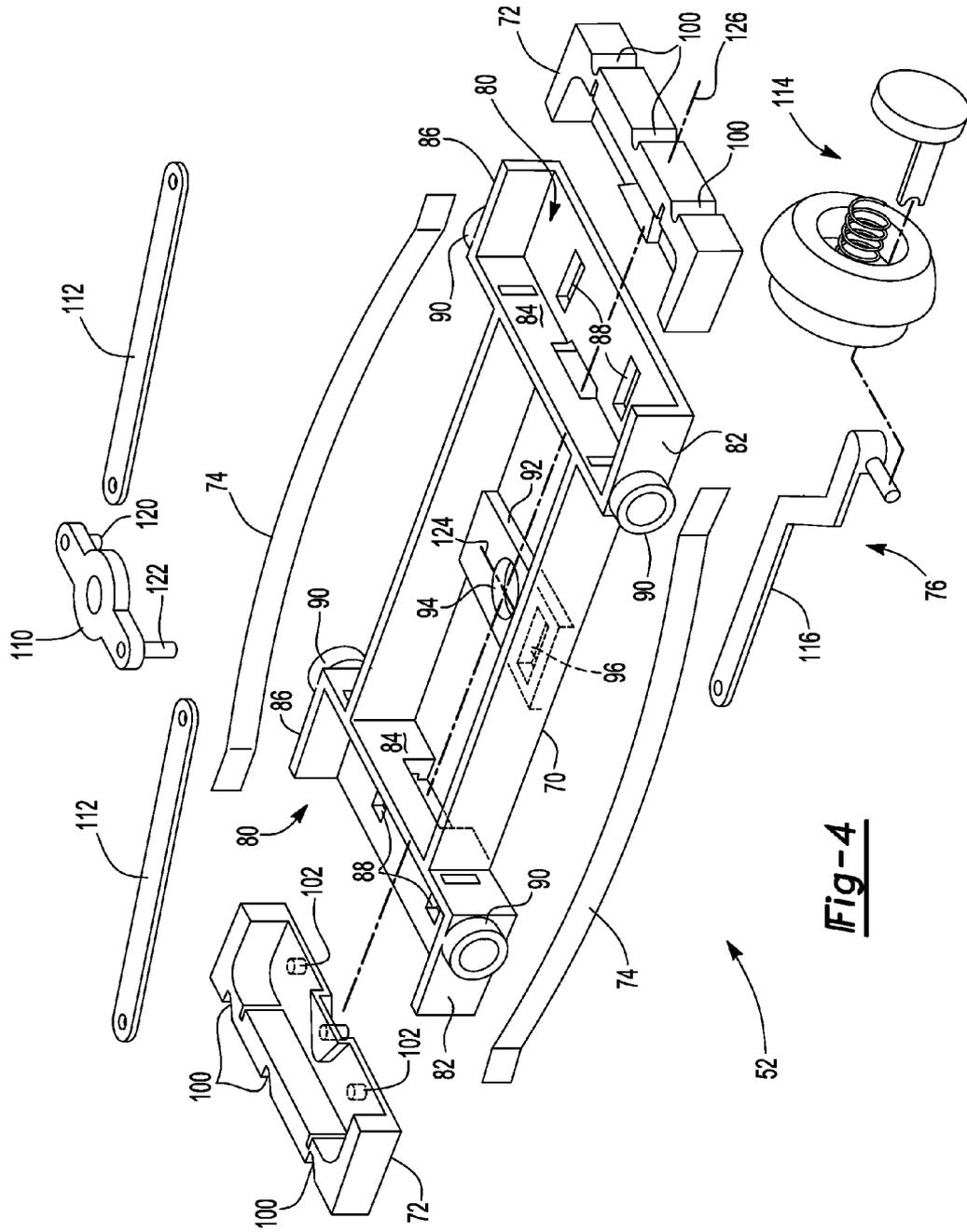


Fig-4

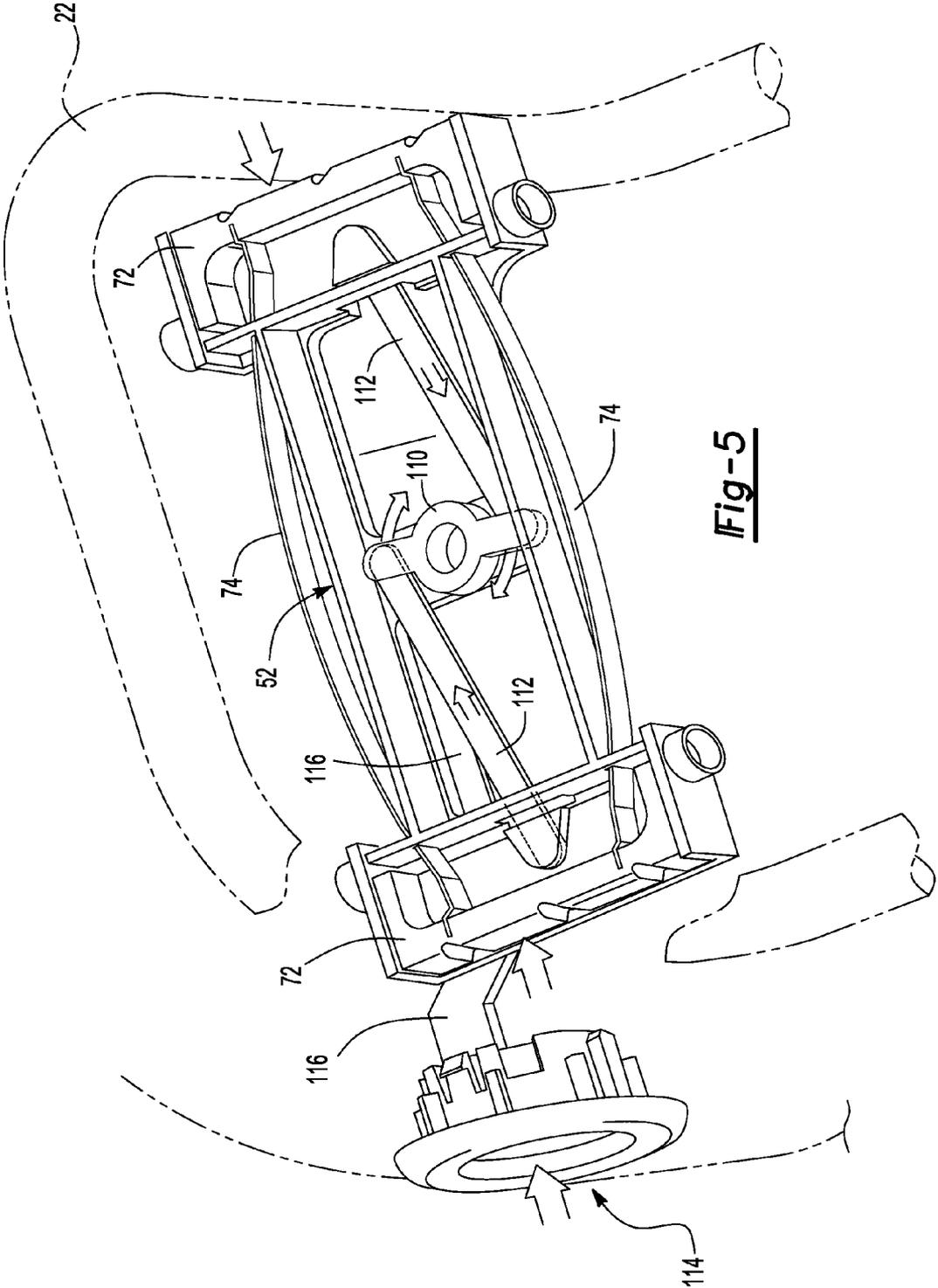


Fig-5

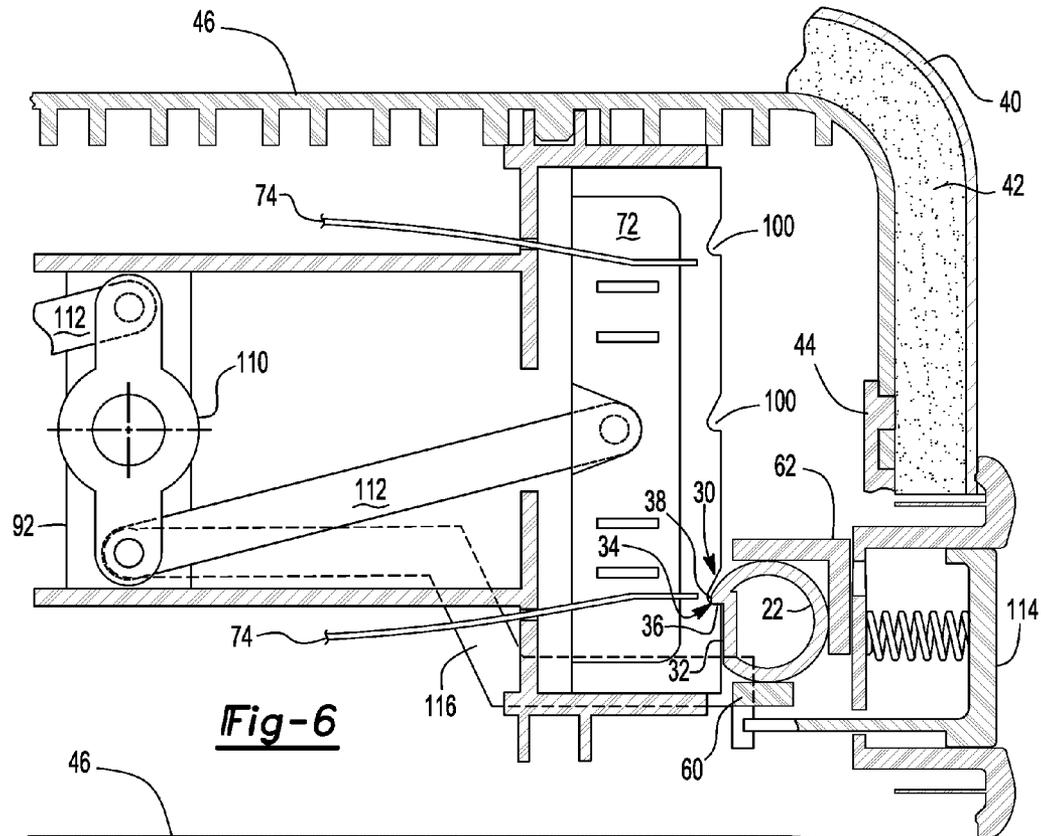


Fig-6

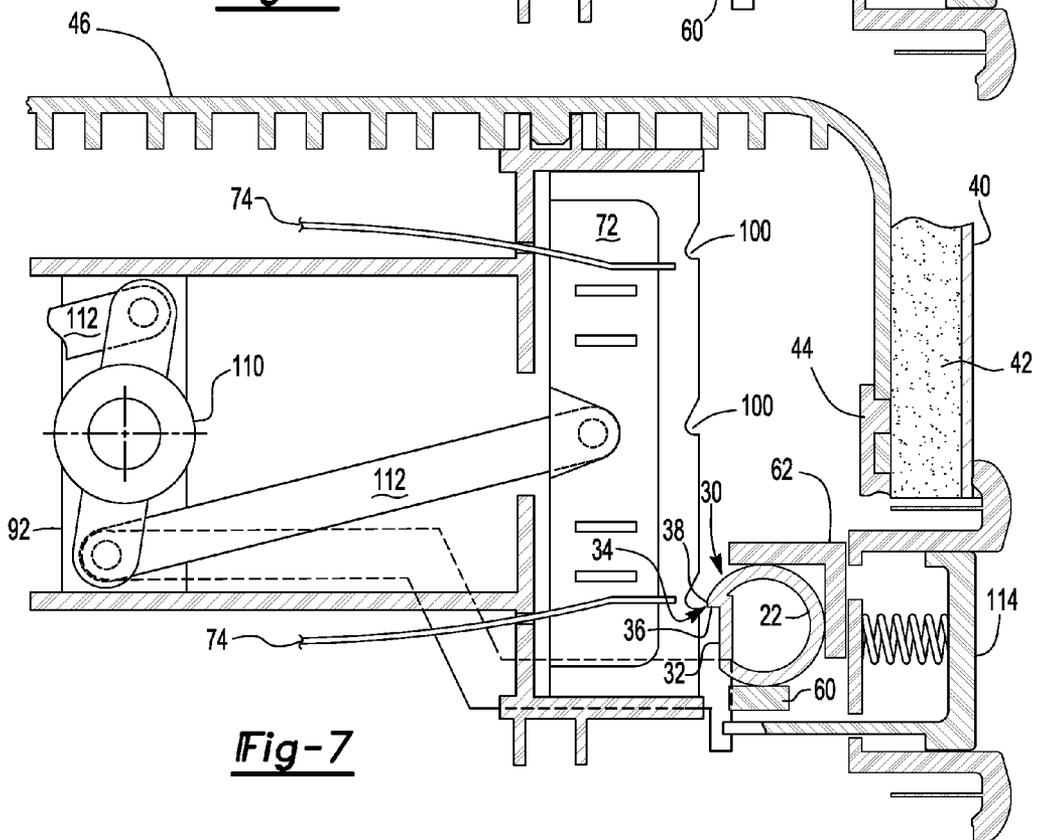


Fig-7

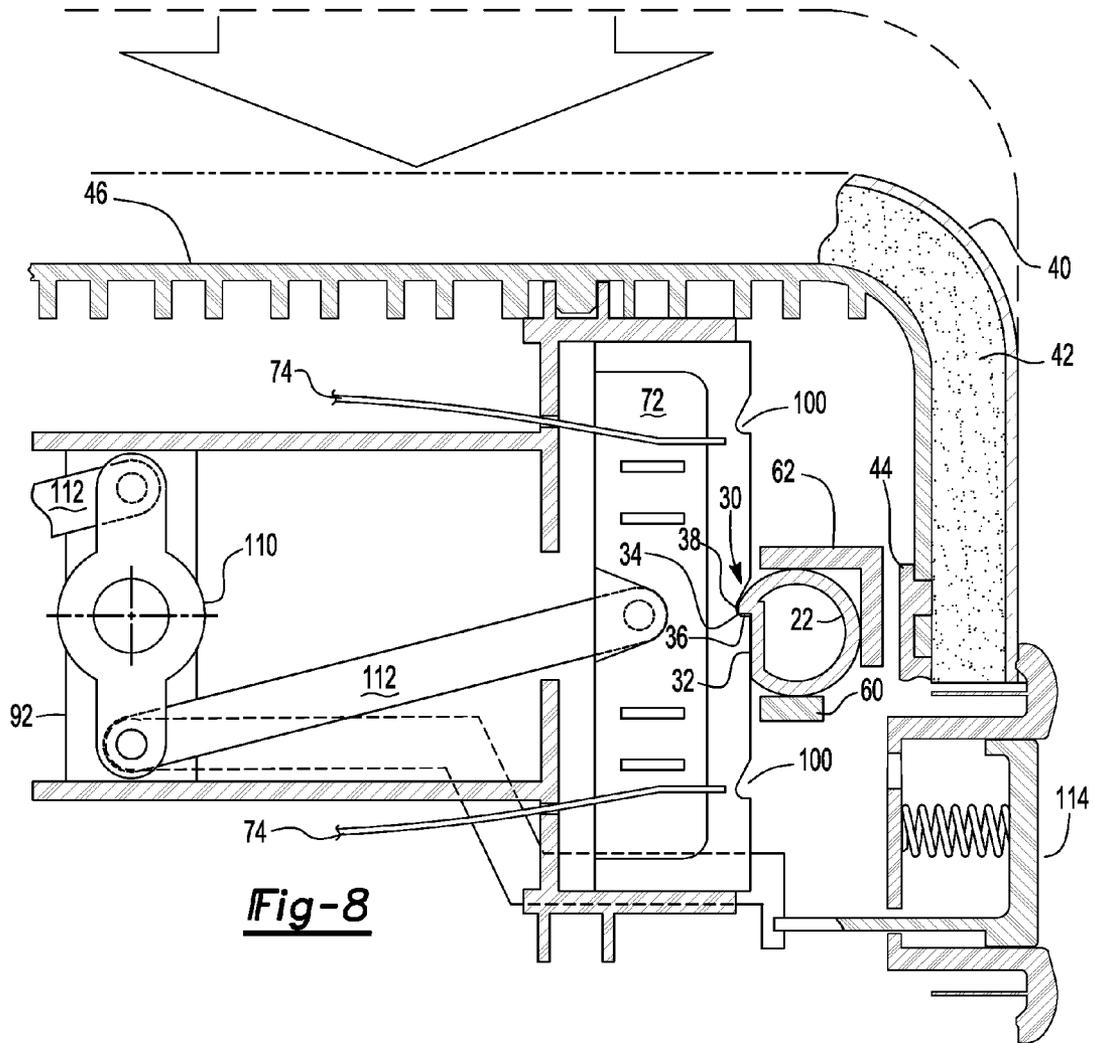


Fig-8

1

SEAT ASSEMBLY HAVING A MOVEABLE HEAD RESTRAINT

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims foreign priority benefits under 35 U.S.C. §119(a)-(d) to DE 10 2009 046 660.6, filed Nov. 12, 2009, which is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a seat assembly having a moveable head restraint.

SUMMARY OF THE INVENTION

In at least one embodiment a seat assembly is provided. The seat assembly may include a seat back having a support post and a headrest assembly disposed on the support post. The headrest assembly includes a housing, a mounting unit, and a latching mechanism. The mounting unit is fixedly disposed on the support post and has a latching mechanism opening. The latching mechanism is configured to slide within the latching mechanism opening. The latching mechanism is configured to engage the support post to inhibit movement of the headrest assembly in a first direction.

In at least one embodiment a seat assembly is provided. The seat assembly has a support post having an engagement feature and a headrest assembly disposed on the support post. The headrest assembly includes a housing and a latching mechanism disposed in the housing. The latching mechanism has a frame and an engagement member. The frame is moveable with respect to the support post. The engagement member is moveable with respect to the frame. Movement of the housing is inhibited when the engagement member engages the engagement feature.

In at least one embodiment a seat assembly is provided. The seat assembly includes a support post having an engagement feature and a headrest assembly moveably disposed on the support post. The headrest assembly has a housing and a latching mechanism mounted to the housing. The latching mechanism has an engagement member that selectively engages the support post. Movement of the housing away from a head of a seat occupant is inhibited when the engagement member engages the engagement feature. Movement of the housing toward the head of a seat occupant is permitted when the engagement member contacts the support post and a sufficient actuation force is applied to the headrest assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a seat assembly having a moveable head restraint.

FIG. 2 is a perspective view of the moveable head restraint having a headrest assembly.

FIG. 3 is an exploded perspective view of the headrest assembly.

FIG. 4 is an exploded view of a latching mechanism of the headrest assembly.

FIG. 5 is a fragmentary perspective view of a portion of the moveable head restraint showing the latching mechanism and a support post.

2

FIG. 6 is a top section view of the moveable head restraint showing the headrest assembly in a first position and the latching mechanism engaging the support post.

FIG. 7 is a section view of the moveable head restraint showing the headrest assembly in the first position with the latching mechanism disengaged from the support post.

FIG. 8 is a section view of the moveable head restraint disposed in a second position with the latching mechanism disengaged from the support post.

DETAILED DESCRIPTION

Detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention that may be embodied in various and alternative forms. The figures are not necessarily to scale, some features may be exaggerated or minimized to show details of particular components. In addition, any or all features from one embodiment may be combined with any other embodiment. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a representative basis for the claims and/or as a representative basis for teaching one skilled in the art to variously employ the present invention.

Referring to FIG. 1, an exemplary seat assembly 10 is shown. The seat assembly 10 may be configured for use in a vehicle, such as a motor vehicle like a car or truck.

The seat assembly 10 may include a seat bottom 12 and a seat back 14. In a vehicular application, the seat bottom 12 may be configured to be mounted on a support surface, such as a floor pan of a vehicle. The seat bottom 12 may be configured to support a seat occupant. The seat back 14 may be pivotally disposed on the seat bottom 12 and may include a head restraint assembly 16. The seat back 14 may be configured to support the back of a seat occupant.

Referring to FIGS. 2 and 3, the head restraint assembly 16 may include a headrest assembly 20 and one or more support posts 22. The headrest assembly 20 may be moveably disposed on the support posts 22 as will be described in more detail below. The support posts 22 may be disposed on the seat back 14 and may be made of any suitable material or materials, such as a metal or metal alloy. The support posts 22 may include a lower portion 24 and an upper portion 26.

The lower portion 24 may extend through the top of the seat back 14. In addition, the lower portion 24 may be fixedly mounted to a structural frame of the seat back 14 such that the support posts 22 do not move with respect to the seat back 14. Alternatively, the lower portion 24 may move with respect to the seat back 14 in one or more embodiments. For instance, the lower portion 24 may be disposed in a guide sleeve that may be disposed on the frame of the seat back 14 or may be part of an active head restraint system that is configured to move in response to a load force or vehicle impact event.

The upper portion 26 may or may not be coaxially disposed with the lower portion 24. In addition, the upper portion 26 may be integrally formed with the lower portion 24. In the embodiment shown in FIG. 3, the upper portion 26 is generally U-shaped and extends between two lower portions 24 of the support post 22.

The upper portion 26 may include one or more engagement features 30. An exemplary engagement feature 30 is best shown in FIG. 6. An engagement feature 30 may have any suitable configuration. For instance, the engagement feature 30 may have a male configuration, a female configuration, or combinations thereof. In the embodiment shown, the engagement feature 30 includes a flat 32 and a protrusion 34 disposed

adjacent to the flat 32. The protrusion 34 may include a first surface 36 that inhibits movement of the headrest assembly 20 and a second surface 38 that facilitates movement of the headrest assembly 20 when a sufficient actuation force is provided. For instance, the second surface 38 may be an angled or curved surface that permits ratchet-like movement as will be discussed in more detail below. The upper portion 26 may include multiple engagement members 30. For instance, corresponding engagement features 30 may be disposed generally opposite each other on areas of the upper portion 26 that extend toward lower portions 24.

Referring to FIGS. 2 and 3, the headrest assembly 20 may be configured to support the head of an occupant of the seat assembly 10. The headrest assembly 20 may be generally be disposed above the seat back 14 and may include a trim cover 40, a cushion 42, a first housing 44, a second housing 46, a mounting unit 48, one or more sleeves 50, and a latching mechanism 52.

The trim cover 40 may cover at least a portion of a visible exterior surface of the headrest assembly 20. The trim cover 40 may be made of any suitable material or materials, such as a fabric, vinyl, leather, or the like. The trim cover 40 may cover the cushion 42, which may be disposed under at least a portion of the trim cover 40.

The first and second housings 44, 46 may be disposed under the trim cover 40 and/or cushion 42. The first and second housings 44, 46 may be made of any suitable material or materials, such as a polymeric material. The first and second housings 44, 46 may each have openings that face toward each other and cooperate to define a cavity that at least partially receives the mounting unit 48, sleeves 50, and latching mechanism 52. The first and second housings 44, 46 may be fastened or connected to each other in any suitable manner. For instance, the first and second housings 44, 46 may snap fit together using one or more locking tabs that engage corresponding slots on another housing.

The first and second housings 44, 46 may also include one or more sleeve engagement features 56 that engage an end of a sleeve 50. A sleeve engagement feature 56 may have any suitable configuration. For instance, a sleeve engagement feature 56 may have a male configuration that fits inside a sleeve 50, a female configuration that may be disposed outside the sleeve 50, or combinations thereof.

The mounting unit 48 may be fixedly disposed on the support post 22. The mounting unit 48 may be provided as a single component or as multiple components. For instance, the mounting unit 48 may include a first mounting plate 60 and a second mounting plate 62 that may be attached or fastened to each other in any suitable manner, such as with one or more fasteners or interlocking features. In addition, the first and second mounting plates 60, 62 may be provided as a unitary structure in one or more embodiments. The mounting unit 48 may include one or more sleeve openings 64 and a latching mechanism opening 66.

A sleeve opening 64 may be provided in the first and/or second mounting plates 60, 62. In FIG. 3, three sets of sleeve openings 64 are shown. A sleeve opening 64 may receive a sleeve 50 and permit movement of the sleeve 50 through the sleeve opening 64. The sleeve openings 64 may be generally disposed inside an area defined by the upper portion 26 of the support post 22 to provide a compact headrest assembly 20.

The latching mechanism opening 66 may also be provided in the mounting unit 48. The latching mechanism opening 66 may receive the latching mechanism 52 and facilitate movement of the latching mechanism 52 through or with respect to the latching mechanism opening 66.

One or more sleeves 50 may cooperate with the mounting unit 48 to help guide movement of the headrest assembly 20. In the embodiment shown, three sleeves 50 are provided. Each sleeve 50 may have a first end that may engage the first housing 44 and a second end disposed opposite the first end that may engage the second housing 46. The sleeves 50 may engage sleeve engagement features 56 on the first and second housings 44, 46 such that the first and second housings 44, 46 and sleeves 50 may move together.

Referring to FIGS. 3-5, an embodiment of a latching mechanism 52 is shown. The latching mechanism 52 may include a frame 70, one or more engagement members 72, one or more biasing members 74, and an actuator assembly 76.

The frame 70 may be configured to be moveably positioned with respect to the latching mechanism opening 66. The frame 70 may have any suitable configuration and may be made of any suitable material, such as a polymeric material.

The frame 70 may include one or more engagement member cavities 80 that receive and guide movement of an engagement member 72. In at least one embodiment, two engagement member cavities 80 provided at opposing ends of the frame 70. An engagement member cavity 80 may be at least partially defined by one or more walls, such as first, second, and third walls 82, 84, 86, and may generally be open in a direction extending toward the support post 22.

One or more guide slots 88 may be provided with the frame 70 that may help position and guide movement of an engagement member 72. A guide slot 88 may be disposed proximate an engagement member cavity 80. In at least one embodiment, a pair of guide slots 88 is provided with each engagement member cavity 80.

One or more housing engagement features 90 may be provided with the frame 70 for engaging the first and/or second housings 44, 46. The housing engagement features 90 may have any suitable configuration. For instance, a housing engagement feature 90 may have a male configuration, a female configuration, or combinations thereof. In the embodiment shown, a pair of housing engagement features 90 is provided on opposite sides of the frame 70. The housing engagement features 90 may be omitted in one or more embodiments, but the frame 70 may still contact the first and/or second housings 44, 46.

A mounting member 92 may be provided with the frame 70 for receiving a portion of the actuator assembly 76. In the embodiment shown, the mounting member 92 is disposed between and spaced apart from the engagement member cavities 80. The mounting member 92 may include a first opening 94 and a second opening 96 that receive a portion of the actuator assembly 76 as will be discussed in more detail below.

One or more engagement members 72 may be moveably disposed in the frame 70. More specifically, an engagement member 72 may be at least partially disposed in an engagement member cavity 80 and may be configured to move toward or away from the support post 22. The engagement member 72 may include a plurality of support post engagement features 100. The support post engagement features 100 may be spaced apart from each other to provide a plurality of discrete positions in which the headrest assembly 20 may be positioned. Any suitable number of support post engagement features 100 may be provided. In the embodiment shown, three support post engagement features 100 are provided. A support post engagement features 100 may engage or mate with an engagement feature 30 on the support post 22 to inhibit movement of the headrest assembly 20 in at least one direction and may be spaced apart from the support post 22 to

permit movement. A support post engagement feature **100** may be configured to mate with or have a similar shape as engagement feature **30**.

The engagement member **72** may also include one or more guide features **102** that are disposed in a corresponding guide slot **88** in the frame **70** to help guide and/or limit the range of movement of the engagement member **72** between an advanced position and a retracted position as will be discussed in more detail below. For instance, a guide feature **102** may be disposed near a first end of a guide slot **88** in the advanced position and may be disposed near an opposite end of the guide slot **88** in the retracted position.

One or more biasing members **74** may be provided to exert a biasing force on one or more engagement members **72**. For instance, the biasing members **74** may bias an engagement member **72** toward the support post **22**. In the embodiment shown, a pair of biasing members **74** is provided. The biasing members **74** may have any suitable configuration. The biasing members **74** may be configured as leaf springs that may extend between a pair of engagement members **72**. More specifically, the biasing members **74** may have a first and second ends that are disposed opposite each other and received by different engagement members **72** to bias both engagement members **72**. A biasing member **74** may extend through a slot in the second wall **84**.

The actuator assembly **76** may be configured to provide an actuation force that actuates one or more engagement members **72**. For example, the actuator assembly **76** may be configured to transmit force to overcome the biasing force of the biasing members **74** to retract an engagement member **72** away from the support post **22**. The actuator assembly **76** may have any suitable configuration. In at least one embodiment, the actuator assembly **76** may include a pivot member **110**, one or more engagement member links **112**, an input device **114**, and an input device link **116**.

The pivot member **110** may be pivotally or rotatably disposed on the latching mechanism **52**. For instance, the pivot member **110** may be received by first opening **94** of the mounting member **92**. The pivot member **110** may include one or more engagement link mounting features **120** and an input device link mounting feature **122**. In the embodiment shown, two engagement link mounting features **120** are provided on opposite sides of the pivot member **110**. The input device link mounting feature **122** may extend at least partially through the second opening **96** in the mounting member **92**.

An engagement member link **112** may couple the pivot member **110** to an engagement member **72**. For instance, a first end of an engagement member link **112** may engage the pivot member **110** and a second end disposed opposite the first end may engage the engagement member **72**. The engagement member link **112** may be coupled such that it can rotate with respect to the pivot member **110** and/or engagement member **72**. For example, the ends of the engagement member link **112** may be configured with openings or holes that may receive and rotate with respect to pins on the pivot member **110** and engagement member **72**. Alternatively, a pin may be provided on one or more ends of the engagement member link **112** that are received in the pivot member **110** and/or engagement member **72**. The engagement member link **112** may extend through an opening disposed proximate the second wall **84** of the frame **72** in one or more embodiments.

The input device **114** may be configured to receive an actuation force or signal indicative of a request to release the headrest assembly **20**. In at least one embodiment, the input device **114** may receive and transmit an actuation force to the pivot member **110**. The input device **114** may have any suit-

able configuration. For instance, the input device **114** may be configured as a button that may transmit force exerted by a user. The input device **114** may be disposed in any suitable location. In at least one embodiment, the input device **114** may be disposed on the headrest assembly **20**. Alternatively, the input device **114** may be disposed remotely from the headrest assembly **20** in other embodiments, such as an embodiment that does not transmit force exerted by a user to release the headrest assembly **20**. For instance, the input device **114** may be a switch or other electrical or electromechanical device that generates a signal that may be used to control or operate an actuator, such as a motor, solenoid, or the like, that exerts a force to actuate one or more engagement members **72**.

The input device link **116** may couple the input device **114** to the pivot member **110**. For instance, the input device link **116** may include a first end that is coupled to the input device **114** and a second end that may be coupled to the pivot member **110**. The input device link **116** may extend through an opening in the first and/or second housings **44**, **46**. The input device link **116** may be disposed near the second opening **96** in the mounting member **92** or may extend at least partially into the second opening **96** in one or more embodiments.

Referring to FIGS. **5-8**, operation of the head restraint assembly **16** will be described in greater detail. For clarity, FIGS. **6-8** illustrate a single engagement member **72**, but similar operation may be employed for additional engagement members **72**. The head restraint assembly **16** may be configured such that the headrest assembly **20** may move in two manners. First, the headrest assembly **20** may be inhibited from moving in a first direction unless the engagement member **72** is moved toward a retracted position. The first direction may be in a direction that extends generally away from a head of a seat occupant (e.g., from the bottom to the top of FIGS. **6-8**).

The engagement member **72** may move from a first or advanced position to a second or retracted position to permit movement of the headrest assembly **20** in the first direction. The first direction may be generally along a first axis **124**, which is shown in FIG. **3**. Such movement of the latching mechanism **52** is shown starting with FIG. **6**.

In FIG. **6**, the engagement member **72** begins in the advanced position in which the engagement member **72** is biased into contact with the support post **22**. A support post engagement feature **100** of the engagement member **72** may engage or contact an engagement feature **30** on the support post **22**. As such, the engagement feature **30** and support post engagement feature **100** may cooperate to inhibit movement in the first direction.

Referring to FIG. **7**, the engagement member **72** is shown in the retracted position in which the engagement member **72** is moved away from the support post **22**. As such, the support post engagement feature **100** on the engagement member **72** may not engage an engagement feature **30** on the support post **22**. As such, the engagement feature **30** and support post engagement feature **100** may not cooperate to inhibit movement in the first direction. Actuation of the engagement feature **72** may be accomplished through operation of the latching mechanism **52**. For instance, actuation of the input device **114** may move the input device link **116**, rotate the pivot member **110**, move the engagement member links **112**, and retract the engagement members **72**. This direction of movement of these components is also indicated by the arrows in FIG. **5**.

Referring to FIG. **8**, the headrest assembly **20** is moved in the first direction with respect to FIGS. **6** and **7**. As such the headrest assembly **20** may be located closer to the head of a

seat occupant. More specifically, the headrest assembly **20** is illustrated such that a second support post engagement feature **100** on the engagement member **72** is disposed proximate the engagement feature **30** on the support post **22**. As such, the headrest assembly **20** may move along the first axis **124** while the engagement member **72** moves along a second axis **126**.

The engagement member **72** may or may not be held in the retracted position during movement in the first direction. For example, the engagement member **72** may be held in the retracted position and then released after the headrest assembly **20** is moved to a desired position to permit re-engagement with the support post **22**. Alternatively, the engagement member **72** may be released to move toward the advanced position after the headrest assembly **20** has started to move to a different position. As such, a portion of the engagement member **72** between two support post engagement features **100** may contact and slide across the engagement feature **30** during movement between discrete locking positions. Contact of the engagement member **72** and engagement feature **30** during movement may be due to the biasing force exerted by the biasing member **74**.

The headrest assembly **20** may be permitted to move along the first axis **124** in a second direction disposed opposite the first direction in a different manner that described above. For example, movement in the second direction may occur in response to a sufficient actuation force and without disengaging the latching mechanism **52** from the support post **22**. The second direction may be in a direction that extends generally toward from a head of a seat occupant, or in a direction that extends from the top of the section views shown in FIGS. **6-8** toward the bottom of each section view.

Actuation in the second direction may occur in response to a sufficient actuation force provided to the headrest assembly **20**. The actuation force may or may not be due to manually applied forces or intervention. For instance, a seat occupant may exert an actuation force on the headrest assembly **20** to move the headrest assembly **20** in the second direction by pulling the headrest assembly **20** closer to the head of the occupant. Alternatively, the headrest assembly **20** may be configured to move in response to inertial forces, such as may occur during a vehicle impact event.

Movement in the second direction may occur without moving the engagement member **72** with the actuator assembly **76**. For instance, an actuation force in the second direction may cause the engagement member **72** to move out of engagement with the engagement feature **30** on the support post **22**. The support post engagement feature **100** may slide along the second surface **38** of the engagement feature **30** and out of the engagement with the support post engagement feature **100** in a ratchet-like manner. The headrest assembly **20** may then be moved to a different position.

While embodiments of the invention have been illustrated and described, it is not intended that these embodiments illustrate and describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention.

What is claimed is:

1. A seat assembly comprising:
 - a seat back having a support post; and
 - a headrest assembly disposed on the support post, the headrest assembly including:
 - a housing;
 - a mounting unit fixedly disposed on the support post within the housing such that the mounting unit does

not move with respect to the support post, the mounting unit having a latching mechanism opening; and a latching mechanism configured to slide within the latching mechanism opening, the latching mechanism being configured to engage the support post to inhibit movement of the headrest assembly in a first direction.

2. The seat assembly of claim **1** further comprising a sleeve disposed on the housing that is moveably disposed in a sleeve opening in the mounting unit.

3. The seat assembly of claim **1** wherein the latching mechanism further comprises an engagement member that moves between an advanced position in which the engagement member contacts the support post to inhibit movement of the headrest assembly and a retracted position in which the engagement member is spaced apart from the support post.

4. The seat assembly of claim **3** wherein the engagement member moves substantially perpendicular to the first direction between the advanced position and the retracted position.

5. The seat assembly of claim **3** wherein the engagement member includes a plurality of support post engagement features that are spaced apart from each other and configured to engage an engagement feature disposed on the support post.

6. The seat assembly of claim **3** further comprising a biasing member that exerts a biasing force to bias the engagement member toward the advanced position.

7. The seat assembly of claim **3** wherein the headrest assembly further comprises an actuator assembly having a pivot member and an engagement member link extending between the pivot member and the engagement member.

8. The seat assembly of claim **7** wherein the rotation of the pivot member actuates the engagement member.

9. The seat assembly of claim **7** wherein the actuator assembly further comprises an input device disposed on the headrest assembly and an input device link extending between the input device and the pivot member.

10. A seat assembly comprising:

- a support post having an engagement feature; and
- a headrest assembly disposed on the support post, the headrest assembly including:
 - a housing having a sleeve;
 - a mounting unit fixedly disposed on the support post within the housing, the mounting unit having a latching mechanism opening and a sleeve opening; and
 - a latching mechanism disposed in the latching mechanism opening, the latching mechanism having a frame that is moveable with respect to the support post and an engagement member that is moveable with respect to the frame;

wherein movement of the housing is inhibited when the engagement member engages the engagement feature.

11. The seat assembly of claim **10** wherein the frame is moveable along a first axis and the engagement member is moveable along a second axis that is substantially perpendicular to the first axis.

12. The seat assembly of claim **10** wherein frame includes first and second engagement member cavities that receive first and second engagement members.

13. The seat assembly of claim **12** further comprising a biasing member that extends between the first and second engagement members and biases the first and second engagement members toward the support post.

14. The seat assembly of claim **12** wherein the frame further comprises a mounting member disposed between the first and second engagement members.

15. The seat assembly of claim **14** further comprising a pivot member disposed on the mounting member, the pivot

9

member being coupled to the first and second engagement members by first and second engagement member links, wherein the first and second engagement members move away from the support post when the pivot member is rotated in a first rotational direction and the first and second engagement members move toward the support post when the pivot member is rotated in a second rotational direction.

16. The seat assembly of claim 12 wherein the engagement member includes a guide feature disposed in a guide slot in the frame.

17. A seat assembly comprising:

a support post having an engagement feature; and
a headrest assembly moveably disposed on the support post, the headrest assembly including:

a housing;

a mounting unit fixedly disposed on the support post within the housing such that the mounting unit does not move with respect to the support post, the mounting unit having a latching mechanism opening; and
a latching mechanism moveably disposed in the latching mechanism opening and mounted to the housing, the

10

latching mechanism having an engagement member that selectively engages the support post;

wherein movement of the housing away from a head of a seat occupant is inhibited when the engagement member engages the engagement feature and movement of the housing toward the head of a seat occupant is permitted when the engagement member contacts the support post and a sufficient actuation force is applied to the headrest assembly.

18. The seat assembly of claim 17 wherein movement of the housing away from a head of a seat occupant is permitted when the engagement member disengages the engagement feature.

19. The seat assembly of claim 17 further comprising a second engagement member disposed on the latching mechanism opposite the engagement member.

20. The seat assembly of claim 17 wherein the housing includes front and rear portions that move together when the headrest assembly is actuated.

* * * * *